

## **REMARKS**

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claims 16-38 are pending. Non-elected claims 16-26 are withdrawn from consideration by the Examiner.

Claim 27 is amended to delete “thin pieces.”

Entry of the amendment is proper under 37 CFR §1.116, because the amendment places the application in condition for allowance, and does not raise any issue requiring further search and/or consideration (as the amendment addresses issues previously discussed throughout prosecution). The amendment is necessary and was not earlier presented, because it is made in response to arguments raised in the final rejection. Thus, entry of the amendment is respectfully requested.

### **I. Second Information Disclosure Statement**

Applicants respectfully request consideration of the Information Disclosure Statement filed May 21, 2009. Applicants have received an abstract of JP 51-018245. Thus, Applicants submit herewith a Revised Form PTO 1449 citing the abstract, and respectfully request the Examiner to initial each cited reference on the Revised Form PTO 1449.

### **II. Claim Rejection Under 35 U.S.C. § 103**

The Examiner maintains the rejection of claims 27-38 under 35 U.S.C. § 103(a) as being unpatentable over Maeda et al. (US 6,189,771) in view of Imamura et al. (US 2002/0185309). Applicants respectfully traverse the rejection.

Claim 27 is amended to recite that “the metal powder is in the form of scales or dendrites.” The Examiner indicated that “thin” is a relative term, and particles in a flux may be referred to as “thin.” Thus, “thin pieces” has been deleted from claim 27.

As discussed in Applicants’ previous remarks, the process recited in claim 27 uses a flux which contains a metal powder in the form of scales or dendrites, and Maeda et al. and Imamura et al. do not teach or suggest a metal powder in this form.

Maeda et al. teach that the metal paste is made by mixing metal with flux, and the metal mixture contains one or more of tin, lead, zinc, gold, silver, copper, antimony, indium, and

bismuth (see column 4, lines 1-4). Furthermore, Maeda et al. disclose that the metal in the metal paste has a higher liquidus temperature than 183°C, which is the liquidus temperature of the solder ball (see column 4, lines 38-40). **However, the reference does not disclose or suggest “a metal powder in the form of scales or dendrites,” as recited in claim 27.**

The Imamura et al. reference does not cure this deficiency.

Imamura et al. teach a flux paste including a base flux and metal grains having diameters smaller than diameters of the projection electrodes, and having a thickness so as to form a space between the flux paste and the electronic part when the electronic part is mounted on the mounting substrate (see paragraph [0024]). Furthermore, Imamura et al. teach that in the first embodiment, the solder bumps 112 have a ball shape and the **metal grains 116 also have a shape having a smooth surface (specifically, spherical shape) so as to easily move when the solder bumps 112 are pressed by the connection terminals 114** (see paragraph [0070]). Accordingly, the Imamura et al. reference teaches that the metal grains are **spherical shapes**, rather than in the form of scales or dendrites, as recited in claim 27.

Therefore, Maeda et al. and Imamura et al. do not teach or suggest each and every feature of claim 27. Accordingly, claim 27 would not have been obvious over the references.

Claim 33 recites “a flux comprising...a metal powder of which constituting elements are **comprised of cores and coatings around the cores**, wherein the coatings are made of a metal which has a metal point higher than that of a solder material which forms the solder portion.” In the final Office Action, on page 2, 3<sup>rd</sup> line from the bottom, the Examiner acknowledges that the Maeda et al. reference does not teach each and every feature of claim 33, and states “Maeda additionally **does not teach the flux compositions.**” Nevertheless, on page 4 of the Office Action, in response to Applicants’ arguments, the Examiner states “Maeda’s grains have cores and coatings around the cores, where the cores and the coatings are made of the same material.”

As discussed above, Maeda discloses metal paste made by mixing metal with flux, the metal mixture containing one or more of tin, lead, zinc, gold, silver, copper, antimony, indium, and bismuth, and the liquidus temperature of the metal contained in the flux is higher than that of 183°C. **Maeda et al. do not teach or suggest a metal powder of which constituting elements are comprised of cores and coatings around the cores**, as recited in claim 33.

Applicants respectfully request the Examiner to specifically point out and explain, in detail, where Maeda et al. disclose cores and coatings around the cores.

Imamura et al. also do not disclose “a metal powder of which constituting elements are comprised of cores and coatings around the cores,” as recited in claim 33. As discussed above, Imamura et al. teach metal grains that are in spherical shapes. The Examiner cites paragraphs [0064]-[0066] and [0078] of the Imamura et al. reference. However, these paragraphs do not at all teach or suggest a metal powder of which constituting elements are comprised of cores and coatings around the cores.

Accordingly, the references fail to teach or suggest each material feature of claim 33. Therefore, claim 33 would not have been obvious over the references.

In view of the foregoing, claims 27 and 33 would not have been obvious over the cited references. Claims 28-32 and 34-38 depend directly from claim 27 or 33, and thus also would not have been obvious over the references.

Accordingly, reconsideration and withdrawal of the rejection are respectfully,

### **III. Conclusion**

For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over the applied references.

Therefore, in view of the foregoing amendments and remarks, it is submitted that the rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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